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Public Health Reports

Treasury Department, United States Marine-Hospital Service. Published in accordance with act of Congress approved February 15, 1893.

VOL. XIII. WASHINGTON, D. C., NOVEMBER 25, 1898. No. 47.

UNITED STATES.

[Reports to the Supervising Surgeon-General, United States Marine-Hospital Service.]

Report of tests made in Louisiana in the use of Professor Sanarelli's serum anti-malarial as a curative agent in yellow fever.

SIR: Under your instructions of September 26, 1898, to proceed to New Orleans, La., to endeavor to obtain cases of yellow fever in which to use the serum, I called upon the authorities of the Charity Hospital on October 1 and upon those in charge of Touro Infirmary in that city, and made known to them your earnest desire to have granted us the privilege of visiting cases of this disease in those institutions and of using the serum in those we thought suitable, this to be done only in consultation with the attending physician.

Prof. Ernest Lewis, vice-president of the board of regents of the Charity Hospital, after consultation with the superintendent of the institution, informed me that it was thought best to refuse your request on the ground that a test of the same serum, presented to the institution by Professor Sanarelli, was then in process, and that the limited number of cases in hospital scarcely furnished material for this test.

The authorities at the Touro Infirmary, especially Dr. Loeber, promised every facility for the use of the serum, manifesting a lively interest in the subject. At the same time they informed me that a definitely marked case of yellow fever was very rare in their hospital; that the prevailing type was so poorly marked, so slightly developed, that often it was found necessary to rely upon the fact of the presence of the disease in the community for a diagnosis. All such cases were treated very tentatively, scarcely any medicine being demanded; and in these it was thought there could be no definite results gained from serum exhibition, since they invariably recovered. Such were the cases then on hand. But I was promised instant notification of any admission of a serious type, and preparation was made to respond to such calls.

Consultation with Surgeon Carter, senior surgeon at New Orleans, on October 8, no suitable cases having been admitted to the Touro Infirmary, decided me to seek at Wilson. La., then generally infected, cases in which to test the prophylactic influence of the serum, and I proceeded there on that date. In this village of some 600 people I found the majority of the population sick or convalescent from a very mild type of fever, so much so that there seemed but little evidence of alarm. Through the courtesy of Acting Assistant Surgeon Bland, U. S. M. H. S., I saw a number of these cases, and he and other local physicians soon acquainted the people with the object of my visit. There was evidence of an indisposition to be "experimented" upon and many declined "the South American treatment." Of those who had been exposed, and who would probably develop the disease, there were 3 or 4 who expressed a disposition to submit to the prophylaxis, but they invariably asked for a guarantee, and when this could not be given they hesitated between the unknown remedy and the light type of the disease.

However, 2 cases of tolerably well-developed yellow fever were found willing to receive the serum treatment, and these are detailed below. In the second case the use of the serum was followed by such annoying urticarious erythema, especially after the second injection, that the apprehensions of the family were aroused, and the fact of the new treatment having produced symptoms not seen in any other cases, and of so serious an appearance, immediately became the subject of general comment, and I quickly found the serum relieved of all sympathy, and invested with unknown possibilities for harm. I could get no consent to its prophylactic use.

At this time advice from Surgeon Carter directed me to Baton Rouge, La., where fever was then very rapidly spreading, and by invitation of Dr. C. McRea, I visited that city on October 12, meeting and discussing with a large number of the physicians the probability of being able to use the serum. There was an expression of the liveliest interest in the subject and a disposition to render me aid, but a general conviction that they were scarcely warranted in advising the use of the serum in view of the very simple nature of the prevailing disease. In those cases developing more serious symptoms it was not deemed best to rely upon the serum. Hoping that cases might have occurred in the Touro Infirmary at New Orleans I returned to that city, and although there had been and were none suitable in that institution, I had the opportunity to see one at the United States Marine Hospital under the care of Dr. Faget. This is detailed below:

Case No. 1: Robert Anderson; aged 50 years; a vigorous man, was taken sick at 10 p. m., October 8, 1898, with intense pain in back and limbs and a severe rigor, followed by high fever. When seen at 4 p. m. of the 9th, in consultation with Dr. Bland, the typical facies, pains and commencing icterus left no doubt that he had succumbed to the infection to which he had been freely exposed. Thus far only a mild mercurial had been prescribed, and with his consent the antiamarylic serum was used. At 6.15 p. m., 10 c. c. of serum were injected into the connective tissues of the loin, pulse 84, temperature 38.7° C.; much congestion of vessels of skin of face. Temperature to be taken every two hours as nearly as practicable.

At 9 p. m., temperature 39°, pulse 86, more marked flushing of the face and some sweating; at 11 p. m., temperature 38.8°, pulse 84, semi-delirious and perspiring very freely, urine free; at 1 a. m., October 10, temperature 38.6°, pulse 81, sleeping; at 3 a. m., temperature

38.4°, pulse 78, quiet; at 6 a. m., temperature 38.1°, pulse 76, urine free; at 8 a. m., temperature 37.8°, pulse 66, urine free; at 9 a. m., 10 c. c. of serum were injected into the connective tissue of loin; at 10 a. m., temperature 37.6°, pulse 70, congestion of face; at 3.40 p. m., temperature 38.3°, pulse 78, sweating profusely; at 5.45 p. m., temperature, 38.5°, pulse 78, urine free; at 7 p. m., temperature 38.6°, pulse 78; at 9.30 p. m., temperature 38.5°, pulse 74, restless; at 11 p. m., temperature 38.5°, pulse 72, slept one and one-half hours; at 1 a. m., October 11, temperature 38.3°, pulse 74, urine free; at 3 a. m., temperature 38.3°, pulse 73, sleeping; at 5.20 a. m., temperature 38.6°, pulse 75, feeling weak; at 7.10 a. m., temperature 37.8°, pulse 70; at 9 a. m., temperature 37.7°, pulse 68, injected serum 8 c. c.; at 7 p. m., temperature 38.4°, pulse 78, urine free; at 10.15 p. m., temperature 38.2°, pulse 76, refused nourishment; at 3 a. m., October 12, temperature 38.1°, pulse 76; at 6 a. m., temperature 38.1°, pulse 72, slept well; at 8 a. m., temperature 37.8°, pulse 75, urine free; at 5 p. m., temperature 38°, pulse 70; at 9 p. m., temperature 37.6°, pulse 68, bowels free; at 1 a. m., October 13, temperature 37.4°, pulse 68, urine free; at 6 a. m., temperature 37.2°, pulse 62, takes food; at 6 p. m., temperature 37.3°, pulse 62, well; at 7 a. m., October 14, temperature 37°, pulse 64; at 6 p. m., temperature 37°, pulse 68, discharged.

Case-No. 2: Fred. A., aged 19; a healthy young man, son of preceding patient, and much exposed to the infection, was taken sick at 6 p. m. of October 9, 1898, with a hard chill; pain in back and limbs, intense headache and nausea. He received a mustard bath and a mercurial with phenacetine. Temperature ranged from 38.5° to 39.5°, pulse 115.

At 9 a. m., 10th, he was given 12 c. c. of serum under the skin; temperature 39.3°, pulse 110; at 10 a. m., temperature 39.6°, pulse 110, and there was marked congestion of face, lips, ears, and body; at 12 m., temperature 39.6°, pulse 110; at 3.40 p. m., temperature 39.6°, pulse 110; at 6 p. m., temperature 39.2°, pulse 114, perspiring; at 8 p. m., temperature 39°, pulse 96; at 11 p. m., temperature 38.9°, pulse 98, slept well; at 1 a. m., October 11, temperature 38.7°, pulse 96; at 3 a. m., temperature 38.5°, pulse 88; at 5 a. m., temperature 38.9°, pulse 98.

Complaints of much dizziness; at 8.30 a. m. gave another 12 c. c. of serum under the skin, temperature 39°, pulse 100; at 9.30, temperature 39.3°, pulse 100; at this hour the congestion of the face was extreme, and there was marked erythema; at 12 m., temperature 39.5°, pulse 105, perspiring and ptialism; at 4.30 we were hastily summoned, and found the patient suffering extremely from the urticarious rash, face puffed and congested, temperature 40°, pulse 110, urine abundant, copious saliva; at 6 p. m., temperature 39.6°, pulse 110, phenacetin given; at 8 p. m., temperature 38.8°, pulse 102, nausea; at 10 p. m., temperature 39°, pulse 104, and vomiting; at 12 m., temperature 39.6°, pulse 110, rash disappearing; at 2 a. m., October 12, temperature 39.3°, pulse 105, urine scant; at 4.30 a. m., temperature 39.3°, pulse 105, slept well; at 6 a. m., temperature 39.3°, pulse 110; at 9 a. m., temperature 39.3°, pulse 97, perspiring; at 11 a. m., temperature 39.4°, pulse 110; at 1.30 p. m., temperature 38.8°, pulse 106; at 5.30 p. m., temperature 39.4°, pulse 90, urine scant; at 7 p. m., temperature 39.3°, pulse 98; at 9 p. m., temperature 39.4°, pulse 98; at 12.30 a. m., October 13, temperature 38.3°, pulse 88; at 4 a. m., temperature 38.1°, pulse 81, slept well; at 6 a. m., temperature 38.4°, pulse 86; at 8 a. m., temperature 38.5°, pulse 83; at 10 a. m., temperature 38.8°, pulse 82; at 12 m., temperature 38.8°, pulse 85; at 2.30 p. m., temperature 38.8°, pulse 82; at 6 p. m., tempera-

ture 38.7°, pulse 83; at 8 p. m., temperature 38.4°, pulse 82, nauseated; at 12 m., temperature 37.8°, pulse 78; at 4.30 a. m., October 14, temperature 37.6°, pulse 77; at 7 a. m., temperature 37.5°, pulse 76; at 9 a. m., temperature 37.5°, pulse 77; at 6 p. m., temperature 37.7°, pulse 80; at 10 p. m., October 15, temperature 37.2°, pulse 78, discharged.

Case No. 3: A. B., seaman, about 35 years of age, was admitted to the isolation ward at the United States Marine Hospital at New Orleans October 13, 1898, and when seen in consultation with Dr. Faget was moribund from almost fatal suppression of urine. He was unconscious; there was hiccough, and jactitation, small weak pulse, devoid of tone. In the hope that the serum would produce a renewal of the suppressed renal function, he was given 20 c. c. serum under the skin, and although there was noticed a slight reaction in temperature from the subnormal, the kidneys did not react, and he died of a uræmic seizure twelve hours after the administration.

One word as to the possibilities of this serum as outlined by Professor Sanarelli; because of its not being an antitoxin it does not tend to overcome the toxins of yellow fever produced in the system, and depends for its curative and prophylactic properties upon its germicidal influence. Hence it is argued by Professor Sanarelli that its use will be absolutely negative in cases in which an amount of toxin has been produced sufficient to destroy life. These cases he does not attempt to treat, passing them by as out of the pale of serum influence. To those who have witnessed the successful struggle of many apparently beyond prognostic hope, there will at once arise the question of properly determining in such cases the fatal degree of intoxication which exists; therefore Professor Sanarelli advises and insists upon the early use of the serum, and thus the destruction of the organism before it has elaborated the fatal proportion of its toxin; such an exhibition of the serum invites the criticism that the mortality rate must be that of selected cases, and, therefore, of diminished statistical value; and in an epidemic of mild type, such as the recrudescence of this fall in Louisiana, it would be contradicted.

As to its influence in case No. 1, there was no doubt a very prompt reaction evidenced by the rise of temperature and pulse, and the great congestion of the face and skin of body. This was followed by a cessation of all pain in a few hours, and a fall of pulse and temperature to a point lower than before the administration. The second and third injections showed less marked reaction. The exhibition of the serum produced a free flow of nonalbuminous urine, some ptyalism, and free perspiration. I am free to confess that the man would have done equally well with any ordinary medication.

In case No. 2 I am satisfied that the boy would have done as well without any medication. His mental and physical condition were not improved by its use. The influence of the serum upon the vaso-constrictors was very pronounced, and caused mental and physical suffering. At first the urine was quite free, and always nonalbuminous, but on the second day became more scant, yet the skin acted very freely. The rash was very general on trunk and limbs. The face, eyelids, and ears were swollen, puffed, and bluish in color, with slightly raised patches which resembled urticaria, the general surface being erythematous with scattered and intensely itchy plaques. The reaction in this case was excessive, the temperature rising to 40° C. The family requested us to desist from this treatment, and I did not object since the pulse was intermittent and dicrotic. As to the doses in these cases,

I had never observed the action of the serum, and therefore refrained from the exhibition of the full dose directed by Professor Sanarelli, that of 20 c. c., and feel satisfied that the latter dose would have caused much alarm, and probably harm, in the second case reported. I regret that I have not been able to accomplish your purpose to have a full test made of this serum, but I realized that it was more necessary to arrive at a just conclusion of its merits, based on correct data, than merely to use it on uncertain cases. A more thorough test will be made at the earliest opportunity.

Respectfully, yours,

EUGENE WASDIN,
Surgeon, U. S. M. H. S.

WASHINGTON, D. C., November 10, 1898.

Case of yellow fever in Washington, D. C.

WASHINGTON, D. C., November 23, 1898.

SIR: I have the honor to report a death in this city, on the 18th instant, from yellow fever. The deceased was a civil engineer in the employ of the Nicaraguan Canal Commission, who had arrived at New York on the steamer *Allegheny* on the 16th instant from Greytown, Nicaragua, via Port Limon, Costa Rica. He came directly to this city from New York on the day of his arrival, registered at a hotel here about 7 o'clock, and went immediately to his room, where he apparently became unconscious shortly afterward. Nothing more is known of him until about 3 o'clock a. m. on the morning of the 18th instant, when the occupant of the adjoining room was aroused by noises in the apartment occupied by the deceased. A physician was immediately called, and, suspecting the nature of the disease, took steps to have it definitely diagnosed. The patient died at 2 o'clock p. m. on that date. All doubt as to the nature of the disease was removed by a necropsy held on the 19th instant.

I am glad to take this opportunity to thank you for the prompt assistance furnished in this case by your Bureau.

Respectfully,

WM. C. WOODWARD, M. D.,
Health Officer.

Further concerning suspicious cases on the Duchesse Anne.

ANGEL ISLAND, CAL., November 12, 1898.

SIR: Confirming my telegram of yesterday, I have the honor to report the facts more in detail concerning the quarantining of the French bark *Duchesse Anne*.

The bark arrived here October 28, seventy-four days from Hongkong. One case of smallpox was noted on the bill of health. Otherwise the city and vicinity of Hongkong were free from quarantinable diseases. The captain, Joseph Servany, aged 31, born in France, died August 20, five days out. A sailor, Ange Menier, aged 55. France, died September 19, twenty-five days out.

The cause of death could not be ascertained on account of the ignorance of the mate and crew of the vessel of medical matters. The captain had been ailing for several days, but confided to no one on board as to his symptoms. At 5 o'clock on the evening of the 5th he was "out of his head," and died at 8 o'clock. Swellings of the glands were not noted. There was œdema of the feet and legs. Nothing more definite than this could be elicited. The sailor, Menier, had been sick